

FY2005 Operational Activities in Support of the Marshall Islands Program

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**Marshall Islands Program
FY2005 Review Presentation**

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Background



Standard approach to risk management and cleanup of radioactively contaminated sites is to control the Total Effective Dose Equivalent (TEDE)

The U.S. regulatory definition of the TEDE from the 10 CFR Part 20.1003 (NRC, 2004) is the sum of the;

deep dose equivalent for external exposures

+

committed dose from intakes of radionuclides



Overview of presentation (non-technical)

1. FY2005 Activities

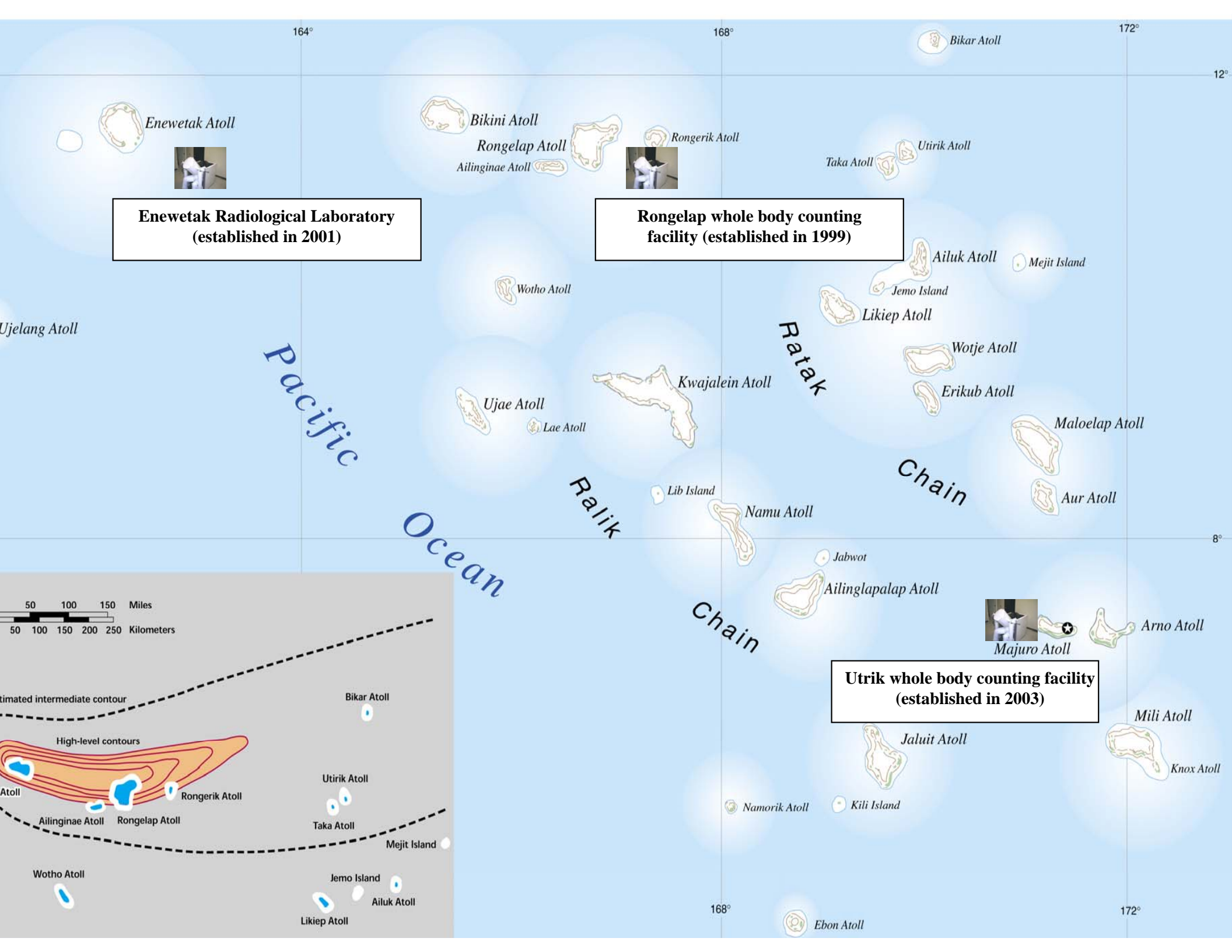
Key support areas;

- **Individual Radiation Protection Monitoring Programs (whole body counting and plutonium urinalysis)**
- **Resettlement Support Activities**
- **Environmental Surveillance (key accomplishment: completion of a 2nd environmental mission to Enewetak Atoll; additional surveys on Rongelap and Bikini).**

2. Where are we going!

Common Theme

- 1) **Individual radiation protection programs coupled with environmental sampling of food products (cesium-137, strontium-90, TRUs) & monitoring of external gamma dose rates provide a good scientific basis for assessing current (and changing) radiological conditions.**
- 2) **Environmental characterization surveys are land-use or ‘changing land-use’ oriented.**



Enewetak Radiological Laboratory
(established in 2001)

Rongelap whole body counting facility
(established in 1999)

Utrik whole body counting facility
(established in 2003)

Individual Radiation Protection Monitoring Programs



How did we do?



Whole Body Counting – Tracking Database(s) FY'05

For FY '05		Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl
		planning	Step 1. baseline-monthly	Step 2. baseline-monthly	Step 3. baseline-monthly	Step 4. baseline-monthly	Step 5. baseline-monthly	Step 6. baseline-monthly
Red = Partial Month Totals								
Facility Location	Month	Number of personnel counts	Transfer QC systems files and print	Update personnel database file (import files into database)	Input of .cnf spectra files from wbc software	Copy new pic files (sort by date and copy)	Copy cal detector arrangement files (& other as needed)	Perform data review 'electro mark' spectra a wbc database generate trans file and unresol listing
Rongelap	October	0	---	---	---	---	---	---
	November	16	X	X	X	X	X	X
	December	0	---	---	---	---	---	---
	January	17	X	X	X	X	X	X
	Feburary	0	---	---	---	---	---	---
	March	27	X	X	X	X	X	X
	April	12	X	X	X	X	X	X
	May	0	---	---	---	---	---	---
	June	7	X	X	X	X	X	X
	July	10	X	X	X	X	X	X
	August	18	X	X	X	X	X	X
	September	24	X	X	X	X	X	X
	October	17	X	X	X	X	X	X
		Cumulative Total - 148						

For FY '05		Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl
		planning	Step 1. baseline-monthly	Step 2. baseline-monthly	Step 3. baseline-monthly	Step 4. baseline-monthly	Step 5. baseline-monthly	Step 6. baseline-monthly
Red = Partial Month Totals								
Facility Location	Month	Number of personnel counts	Transfer QC systems files and print	Update personnel database file (import files into database)	Input of .cnf spectra files from wbc software	Copy new pic files (sort by date and copy)	Copy cal detector arrangement files (& other as needed)	Perform data review 'electronic mark' spectra and wbc databases, generate transfer file and unresolved listing
Enewetak	October	3	X	X	X	X	X	X
	November	0	---	---	---	---	---	---
	December	15	X	X	X	X	X	X
	January	36	X	X	X	X	X	X
	Feburary	15	X	X	X	X	X	X
	March	68	X	X	X	X	X	X
	April	45	X	X	X	X	X	X
	May	18	X	X	X	X	X	X
	June	9	X	X	X	X	X	X
	July	0	---	---	---	---	---	---
	August	30	X	X	X	X	X	X
	September	7	X	X	X	X	X	X
October	0							
		Cumulative Total - 246						

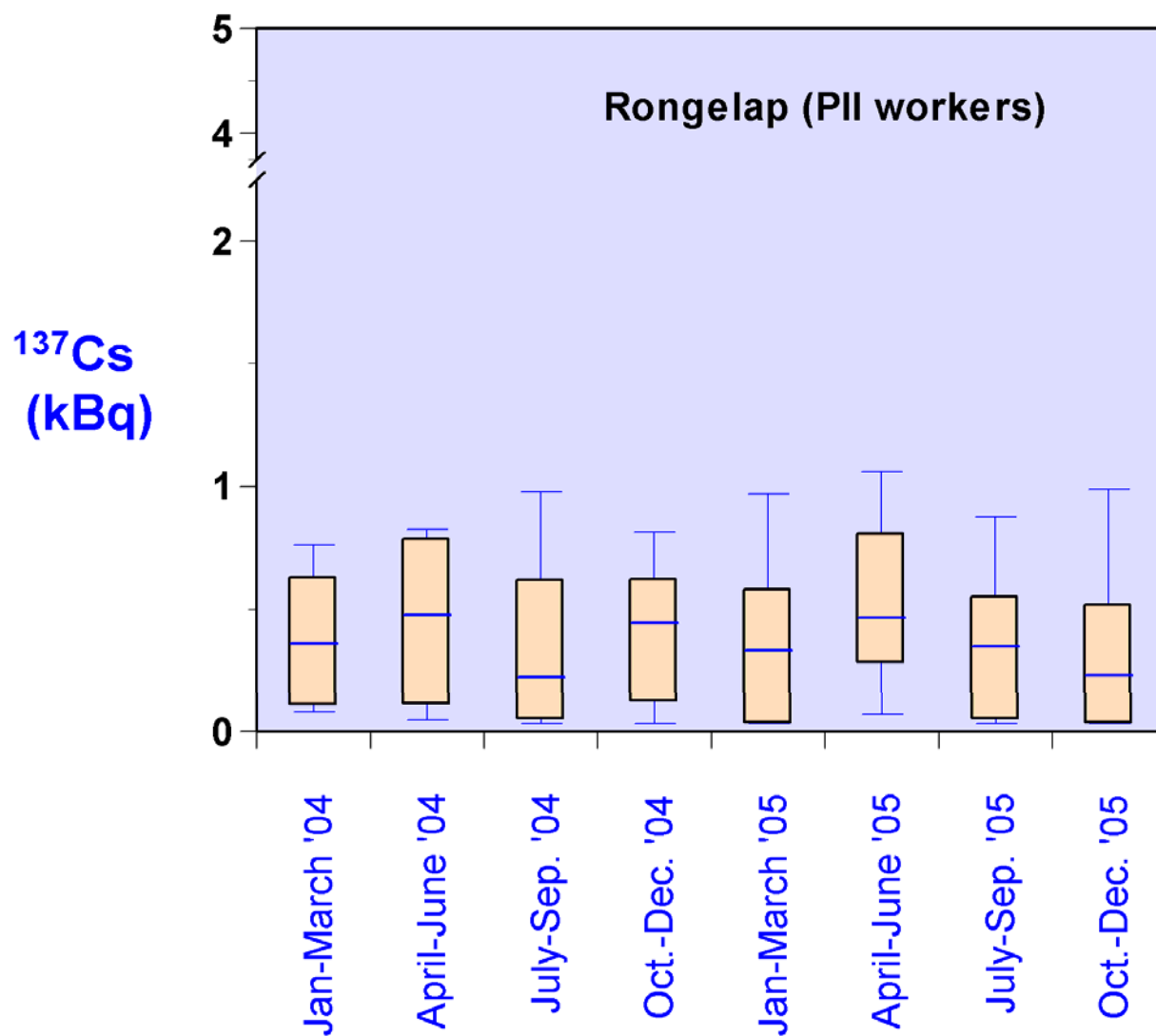
Whole Body Counting – Tracking Database(s) FY'05, cont'd



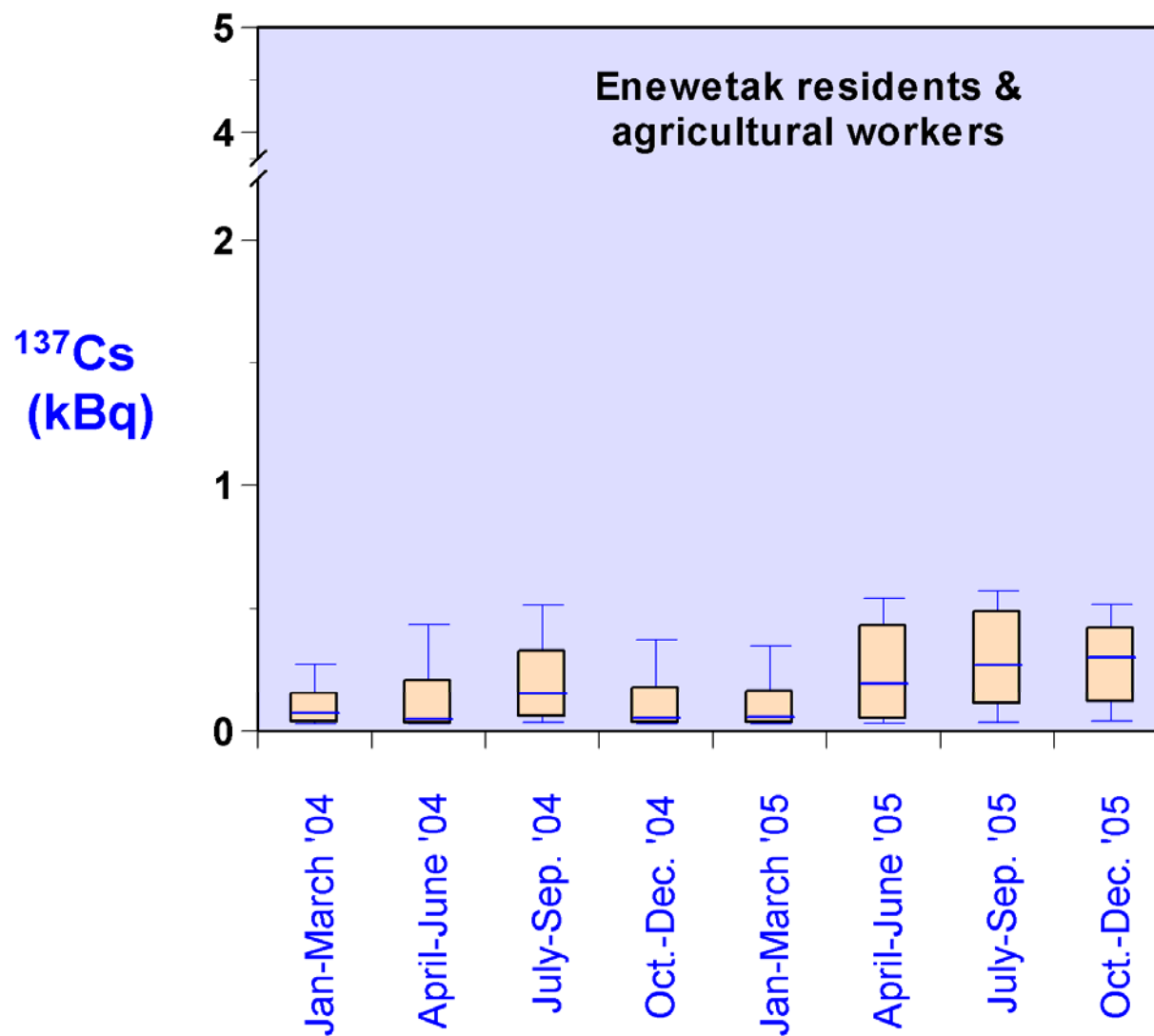
For FY '05		Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl	RI Steven Kehl
		planning	Step 1. baseline-monthly	Step 2. baseline-monthly	Step 3. baseline-monthly	Step 4. baseline-monthly	Step 5. baseline-monthly	Step 6. baseline-monthly
Red = Partial Month Totals								
Facility Location	Month	Number of personnel counts	Transfer QC systems files and print	Update personnel database file (import files into database)	Input of .cnf spectra files from wbc software	Copy new pic files (sort by date and copy)	Copy cal detector arrangement files (& other as needed)	Perform d review 'elec mark' spectr wbc databa generate tra file and unres listing
Majuro	October	56	X	X	X	X	X	X
	November	11	X	X	X	X	X	X
	December	27	X	X	X	X	X	X
	January	4	X	X	X	X	X	X
	Feburary	30	X	X	X	X	X	X
	March	62	X	X	X	X	X	X
	April	33	X	X	X	X	X	X
	May	18	X	X	X	X	X	X
	June	47	X	X	X	X	X	X
	July	43	X	X	X	X	X	X
	August	50	X	X	X	X	X	X
	September	15	X	X	X	X	X	X
	October	27	X	X	X	X	X	X
Cumulative Total - 396								



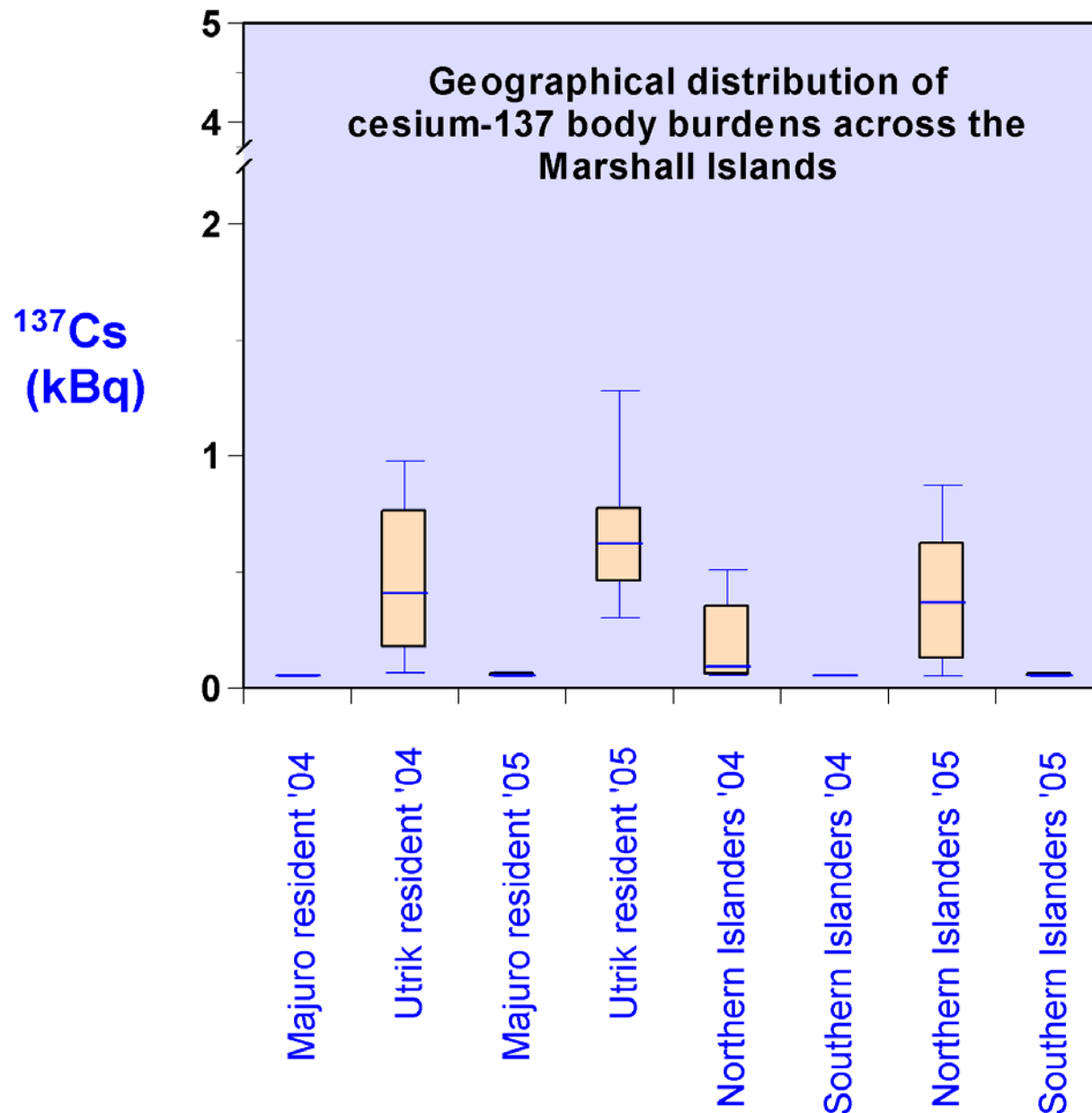
Whole Body Counting Measurements on Rongelap

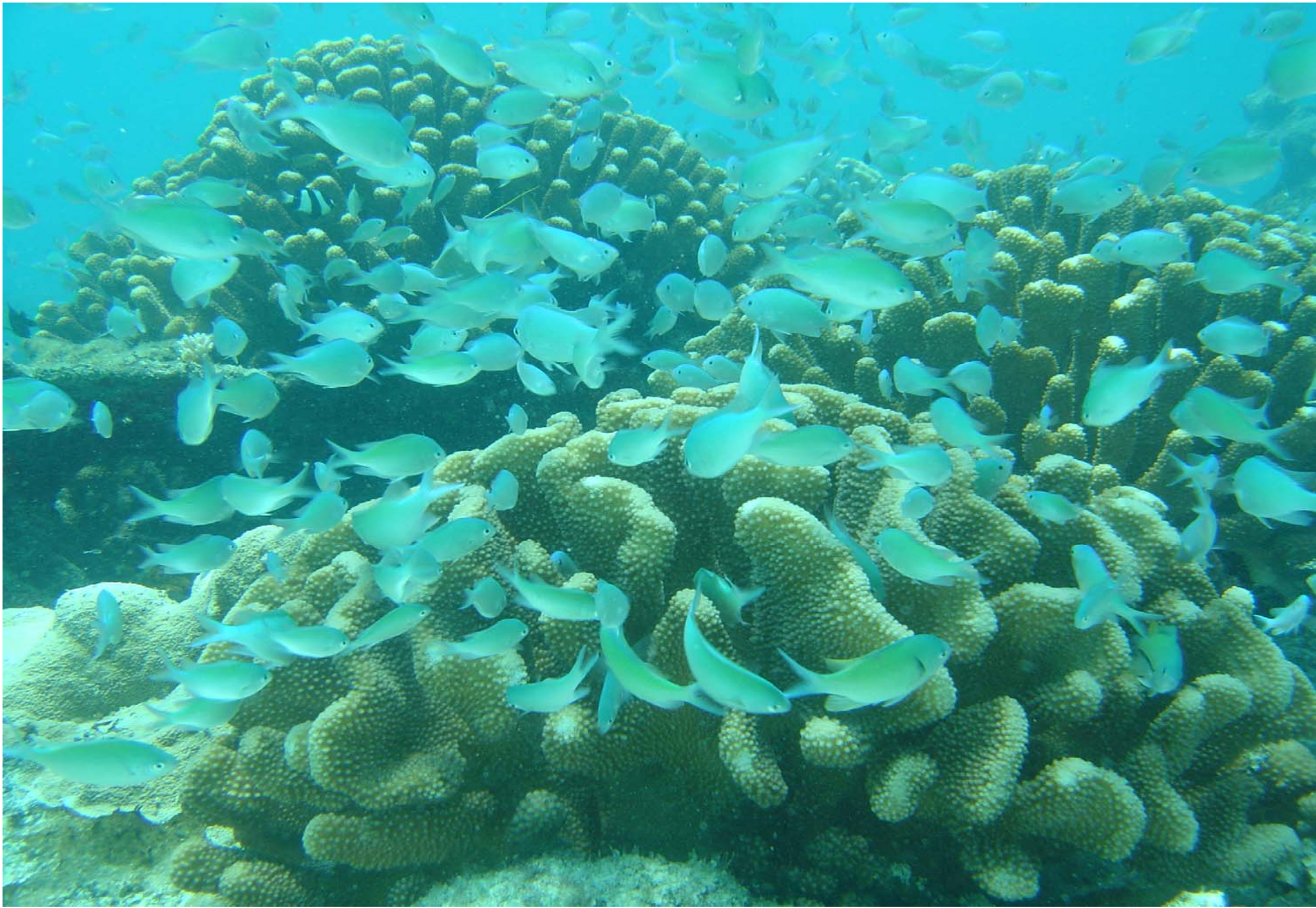


Whole Body Counting Measurement on Enewetak



Whole Body Counting Measurements of the Utrik Population Group as well as other Marshall Islanders



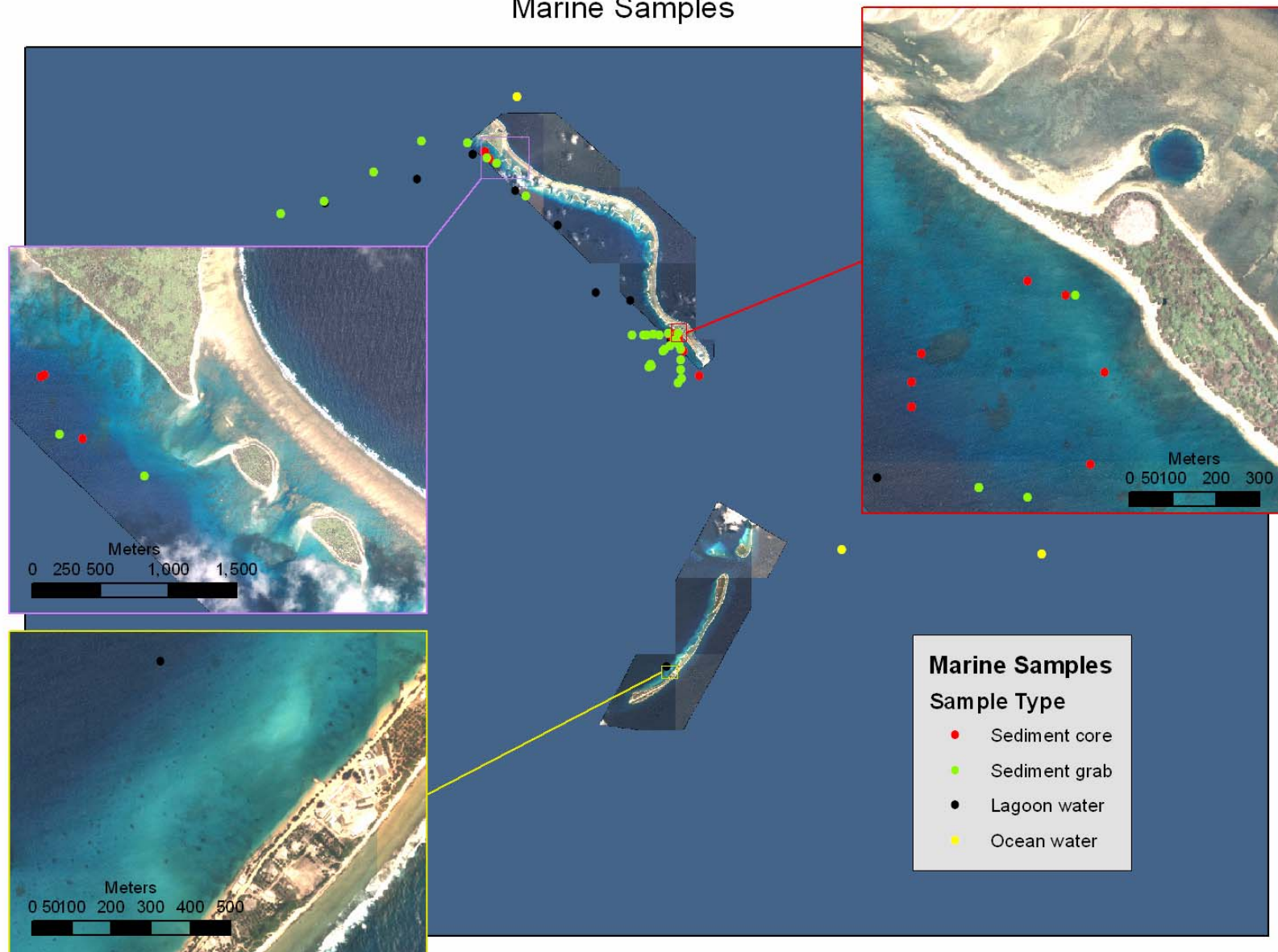






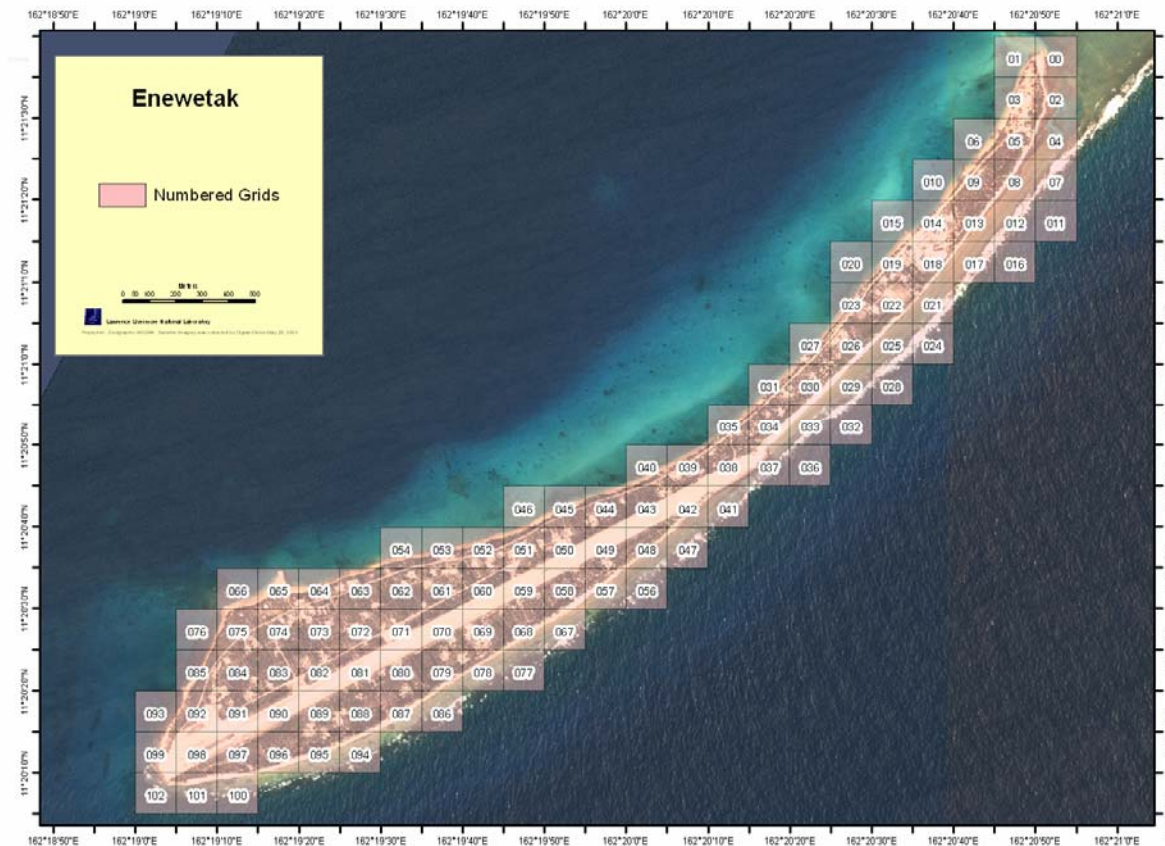
Marine Sampling on Enewetak Atoll

Marine Samples





2005 Environmental Sampling on Enewetak Island



Sampling Strategy:

To collect food crop products (predominately coconuts) from each grid point location covering the entire island

2005 Monitoring Survey of External Doses on Enewetak



2005 Rongelap Resettlement Support



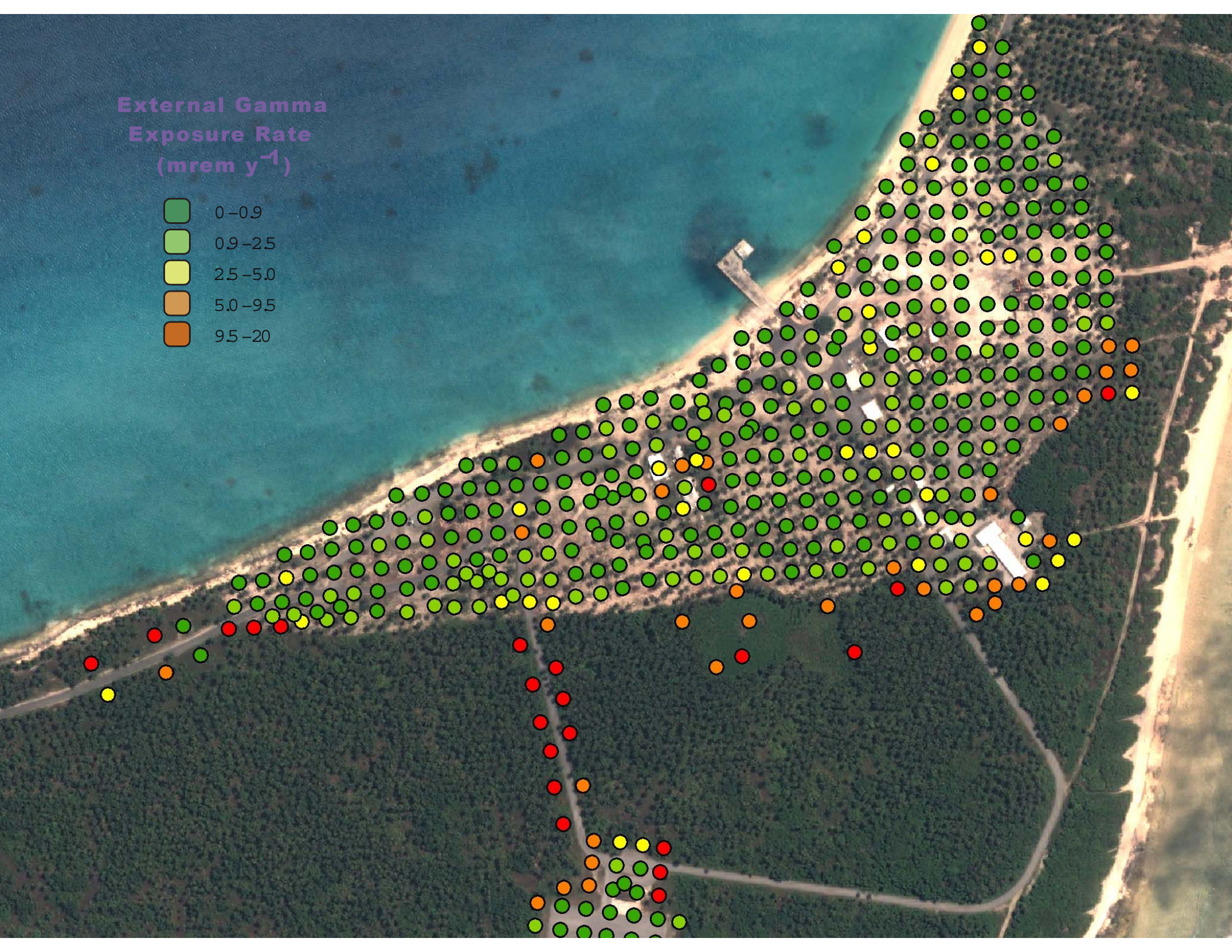
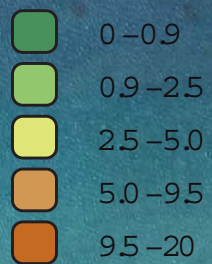
Focus Areas

- 1) External dose rates around home sites
- 2) Collection of food crop products around the village area
- 3) Sampling of *Pandanus* fruit and 'arrow root' growing in the potassium treated area north of the village.





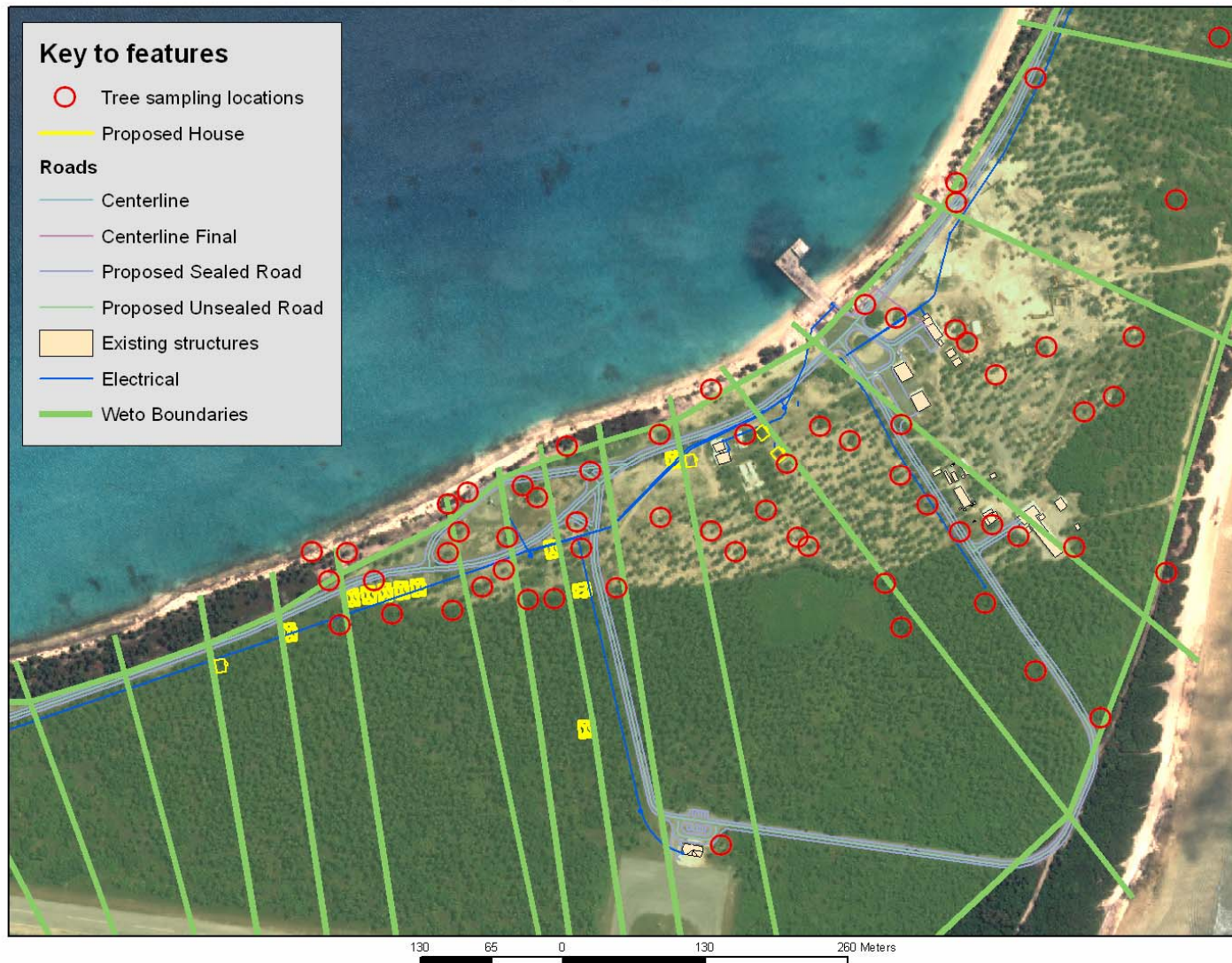
**External Gamma
Exposure Rate
(mrem y⁻¹)**



2005 Rongelap Resettlement Support, cont'd

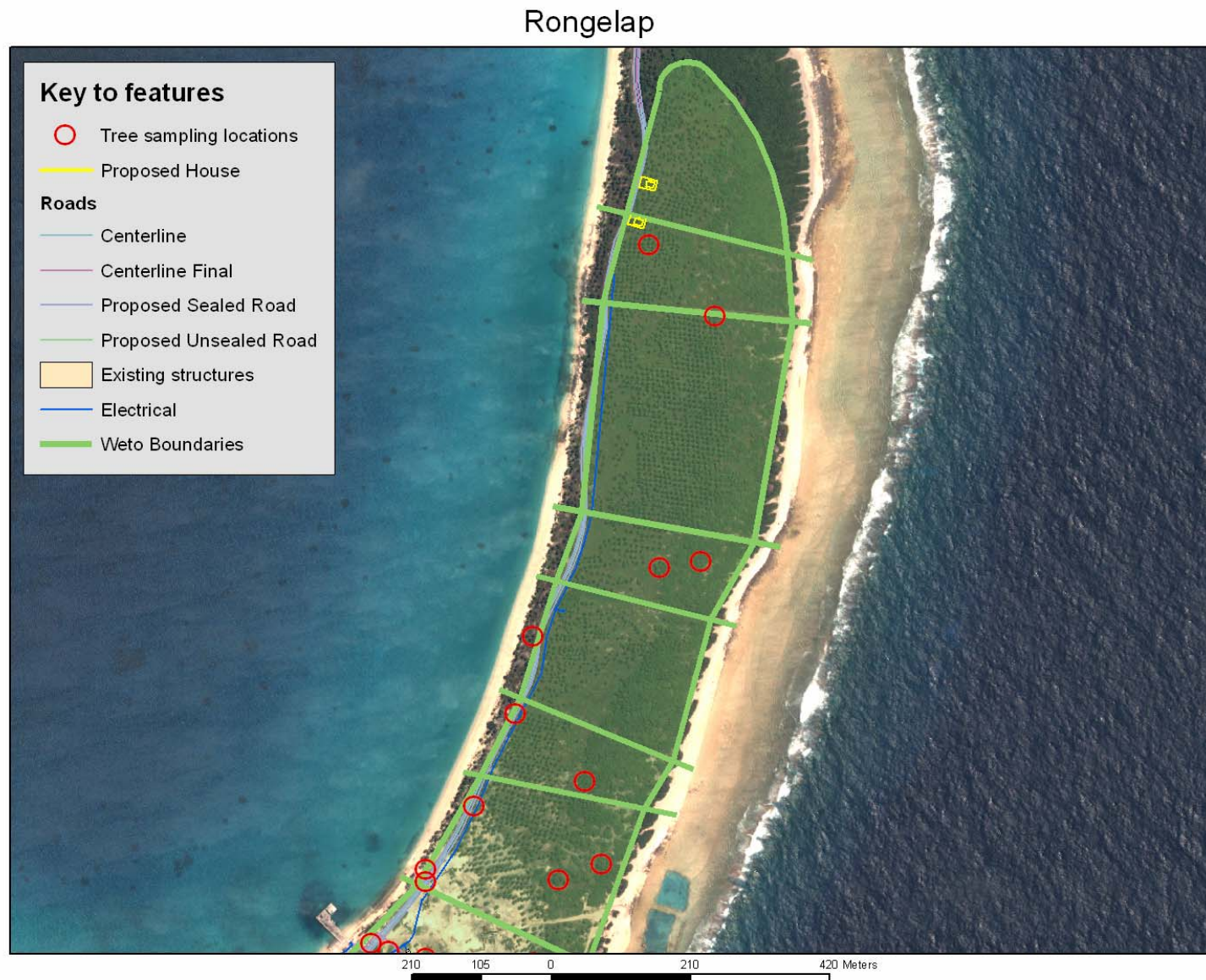


Rongelap Village Area





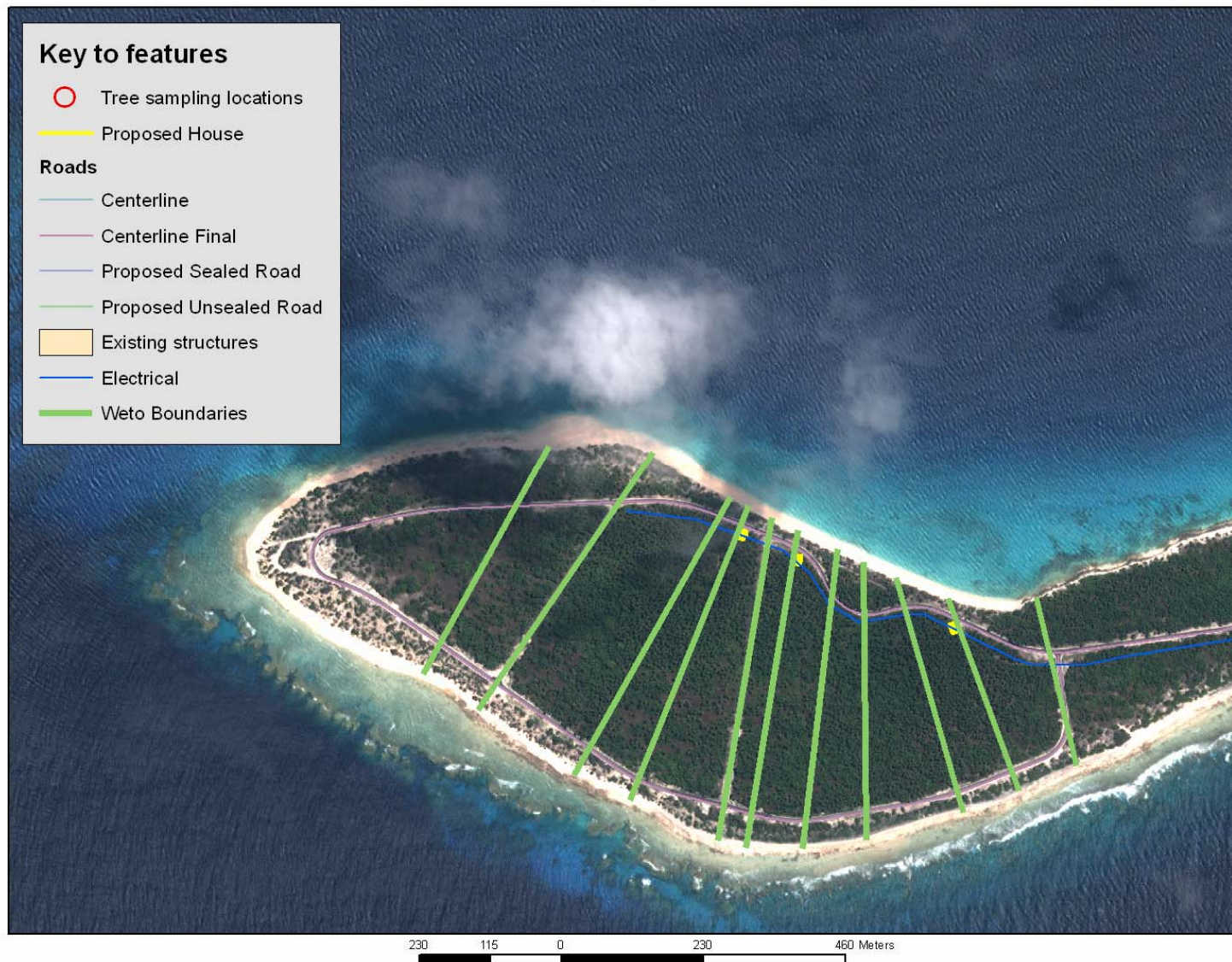
2005 Rongelap Resettlement Support, cont'd



2005 Rongelap Resettlement Support, cont'd

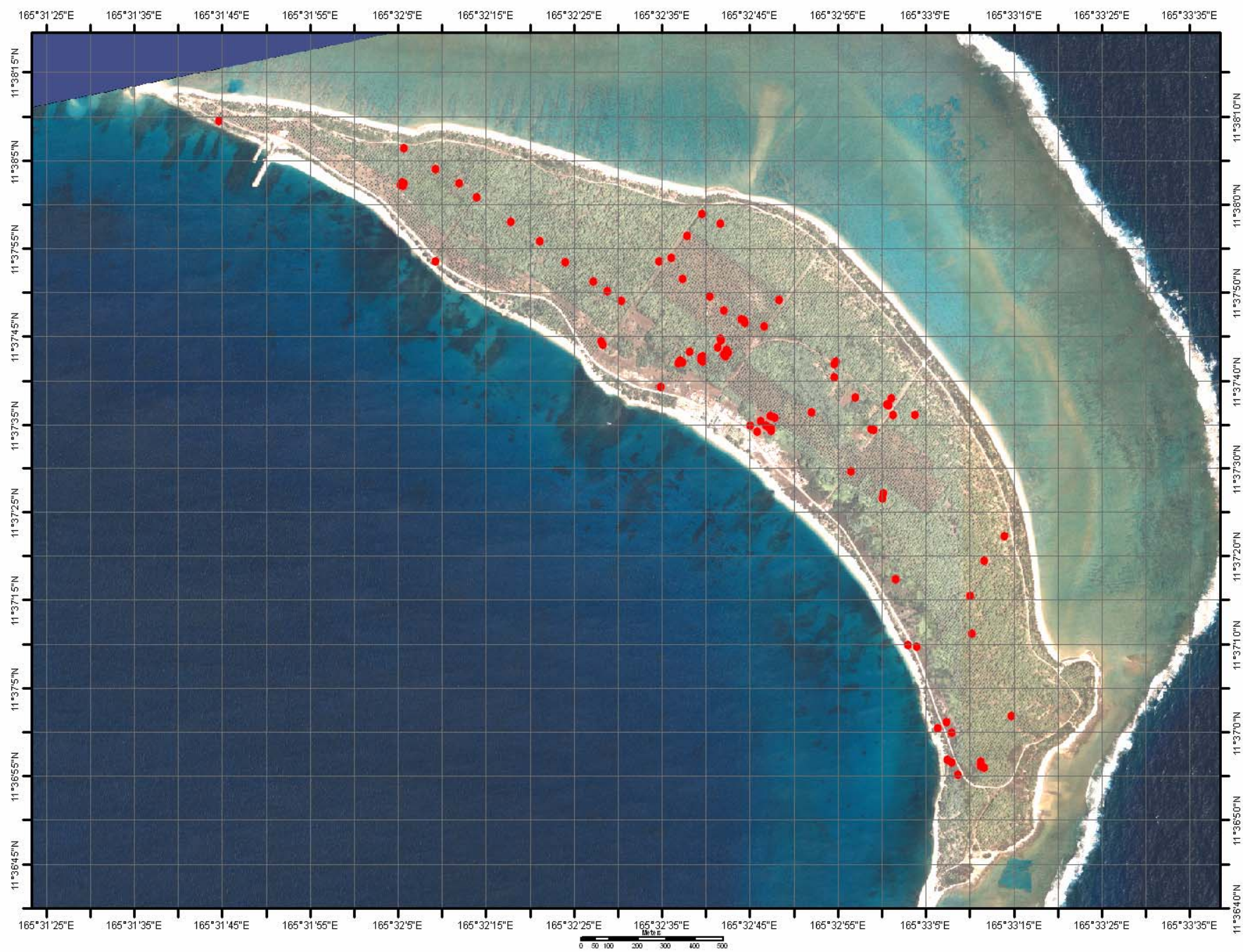


Rongelap





Bikini Sample Trees





Summary

- 1) **Good support from DOE during FY2005 to go back to the field**
- 2) **FY2006 effort will be concentrated on four main areas**
 - **Continuation of our individual radiation protection monitoring programs including the development of baseline urinary excretion data for plutonium on Utrik and for the resettled population on Rongelap Island**
 - **Analytical work (carried over from FY2005)**
 - **Rongelap Island resettlement support ('external dose rate measurements')**
 - **Outer island sampling on Bikini using a 'pantry' sampling approach**

End